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FINAL REPORT OF THE PERSONNEL MANAGEMENT IN THE ALL-VOLUNTEER FORCE STUDY

Robert F. Lockman

CENTER FOR NAVAL ANALYSES
2000 North Beauregard Street, Alexandria, Virginia 22311

Work conducted under contract N00014-76-C-0001

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The Personnel Management in the All-Volunteer Force Study assesses the use of applicant screening, recruit assignment, and reenlistment bonuses to improve the retention of enlisted personnel.

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1. The Center for Naval Analyses was directed to study issues important to Navy manpower and personnel planning in the AVF era. The tasks were to examine the advantages and disadvantages of two kinds of personnel management policies for retention in the Navy: (1) selecting recruits who are most likely to complete their enlistments and assigning them to jobs where they have the best chances of staying, and (2) paying bonuses to reenlist.

2. Enclosure (1) summarizes each of the study's separate products. Given the wide range of questions addressed under the study, publication of one overall report was impractical. Enclosure (1) highlights findings from each study contribution. Requests for copies of these reports should be forwarded to the Center for Naval Analyses via the Chief of Naval Operations (OP-966).

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Robert F. Lockman

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Institute of Naval Studies

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PERSONNEL MANAGEMENT IN THE ALL-VOLUNTEER FORCE STUDY

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FINAL REPORT OF THE PERSONNEL MANAGEMENT IN THE AVF STUDY

PURPOSE

The purpose of this study was to examine the advantages and disadvantages of two kinds of personnel management policies for retaining men in the Navy: (1) selecting recruits who are most likely to complete their enlistments and assigning them to jobs where they have the best chances of staying, and (2) paying men bonuses to reenlist.

SELECTION AND ASSIGNMENT FOR SURVIVAL

Screening of Recruits (Reference 1)

CNA earlier had developed a table of Success Chances of Recruits Entering the Navy (SCREEN) that shows a recruit's chances of surviving the first year of service given his education, mental group, age, and dependency status. Recruiters have used SCREEN since October 1976 in evaluating applicants for enlistment. Because it was based on facts about male recruits who joined the Regular Navy during CY 1973, the first year of the AVF, the Navy asked us to update SCREEN on a recent cohort of recruits, develop versions for reservists and women, and evaluate qualifying scores for enlistment. To accomplish these aims, we used a historical file of Enlisted Master Records for recruits who joined the Navy in CY 1977.

Recruit Characteristics

The major background characteristics of recruits in CY 1973 and 1977 are compared in table 1. The number of males with no prior service who joined the regular Navy was about the same in 1973 and 1977. However, over a quarter of them in 1973 enlisted in a 3-year obligor program that was terminated by DoD on 1 July 1975. The minimum enlistment thereafter was 4 years. About half of the recruits were in the Delayed Entry Program in 1973, compared to three-quarters in 1977. Other noteworthy differences between 1973 and 1977 are:

- Recruits 20 years old or older increased from 17 to 24 percent (a 41-percent increase)
- Class A school attendees climbed from 54 to 64 percent
- Minorities rose from 11 to 15 percent
- First-year loss rate went from 17 to 20 percent.

The background characteristics of the regular Navy, reserve, and women recruits in 1977 are also compared in table 1. The majority of each cohort was in the Delayed Entry Program, in the upper

TABLE 1

CHARACTERISTICS OF RECRUITS
IN CY 1973 AND CY 1977

	CY 73	CY 77		
	USN males	USN males	USNR males[a]	USN females
Number	66,680[b]	68,309	14,811	4,415
Delayed Entry Program	49%	75%	67%	89%
Enlistment waivers	?	25	29	11
H.S. diploma	71	69	59	84
Mental groups 1-3U	64	72[c]	62	90
Age 20 or older	17	24	24	41
Minorities	11	15	19	12
Dependents	6	7	6	4
Attended Class A school	54	64	45	62
1st-year loss	17	20	23	16

[a]Active-Mariner program.

[b]17,300, or 26 percent, of these were 3 year obligors.

[c]68 percent, if we use the Basic Test Battery mental group standard that was applied to the CY 73 USN males in developing the original SCREEN. Comparable percentages for the USNR males and USN females are 59 and 85.

three mental groups, and had high school diplomas. Over 40 percent of the women were at least 20 years old when they came on active duty, compared to only 24 percent of the men. Only a very small percentage had dependents or were married. Over 25 percent of the men enlisted on waivers, compared to 11 percent of the women. About 40 percent of these waivers were for pre-service drug use. Over 60 percent of the USN recruits attended Class A schools during their first year of service, compared to 45 percent of the reservists. The first year loss rate was 20 percent for the USN males, 23 percent for the reservists, and 16 percent for the women.

The following are the background characteristics that we related to first year survival for the 1977 recruits. Education is defined not by the number of years of school (as used in current SCREEN), but as high school diploma; certificate of high school equivalency (principally the Graduate Educational Development or GED test); or less than high school. Mental group is derived from the Armed Forces Qualification Test (AFQT) in forms 6 and 7 of the Armed Services Vocational Aptitude Battery (ASVAB) that is given to all recruits entering military service. Age in years and the presence of primary dependents (or marital status, in the case of the women) are taken as of active duty service date.

Screening Tables

The 1977 SCREEN for USN males is shown in table 2. It is based on mental groups, two age groups (17 through 19 and 20 or older), and three educational levels (diploma, GED, and less than high school). The chances of first-year survival decrease as mental group and educational level decline, as in the 1973 SCREEN. To qualify for enlistment today, all recruits in Mental Group 4 must be high school diploma holders, and all in Mental Group 3 Lower must have high school equivalency certificates.

The SCREEN for reservists in the Active-Mariner program had a pattern like that of the regular Navy recruits. The differences in chances for first-year survival were negligible. Consequently, the regulars and reservists were pooled in the 1977 SCREEN table.

The SCREEN chances of the women followed the pattern of the men. But because recruiting policy requires women to have high school diplomas and be school eligible, there is no need for a SCREEN table for them.

Since the pattern of chances for first-year survival by mental groups, education, and age is generally similar for the 1973 and 1977 male cohorts, there is no need to change the current SCREEN table. However, changes in the AFQT tests and norms that define mental groups are expected in 1980. Also, we at CNA are using a new statistical model to produce a first-term survival curve, not just a point-in-time estimate of survival as is the case with the

TABLE 2

UPDATED AND STREAMLINED SCREENS FOR MALE RECRUITS

Mental[a] group	Age	Updated 1977 SCREEN: High school diploma	GED	Less than high school	Streamlined 1973 SCREEN: 12 years or more	11 years	10 years or less
1	17-19	93	85	77	94	90	89
	20+	90	82	74	92	87	85
2	17-19	91	83	76	90	82	79
	20+	88	79	71	86	76	73
3 Upper	17-19	88	80	73	88	78	75
	20+	84	75	67	83	73	70
3 Lower	17-19	83	75	68	82	71	67
	20+	78	70	62	77	65	61
4	17-19	75	68	62	80	67	63
	20+	79	61	56	74	61	56

[a]For the streamlined version which uses years of education, AFQT score ranges are used instead of mental groups; 95-100, 67-94, 50-66, 35-49, and 21-31. They reflect the more stringent mental group standards used by the Navy prior to the introduction of the ASVAB in CY 1976.

SCREENs. Consequently, we believe it is prudent for the Navy to retain the current SCREEN for now. At the same time, we produced a streamlined version of it that would be easier to use without sacrificing precision.

This streamlined version of the current SCREEN is shown in table 2. It pools the chances of 17-year-olds with 18 and 19-year-olds, years of education greater than 12 with 12 years of education, and single with married recruits. It is shown in table 2 along with the 1977 version for men that uses educational levels instead of years of education.

Qualifying Score for Enlistment

The benefits and costs associated with different SCREEN qualifying scores were assessed against the objective of a constant end-strength of recruits after one year of service. Benefits derive from lower replacement costs, while costs stem from increased recruiting expenditures to meet the end-strength goal. We found that the current qualifying score of 70 is a good trade-off between benefits and costs. Below it, little screening is done; above it too much is done. At 70, all applicants qualify who have (1) 12 or more years of education and/or AFQT scores above the 49th percentile (Mental Groups 1-3 Upper), or (2) at least 11 years of education and AFQT scores from the 35th to the 49th percentile (Mental Group 3 Lower).

Conclusions

From our analysis, we drew these conclusions:

- For women, a SCREEN table is unnecessary as long as Navy policy requires them to be school eligible high school graduates
- For non-prior-service males, either the current operational SCREEN or its streamlined version is suitable for continued use
- The current qualifying score of 70 is appropriate for non-prior-service male applicants
- AFQT changes and application of a new survival estimation model will lead to modified first-term screening standards in the future.

Assignment of Recruits (Reference 2)

We looked at the initial assignments of recruits to Navy ratings to see if changing them could increase first-term retention. In doing this, we simulated the reassignment of recruits to ratings, using the same constraints that the Navy faced when it actually

assigned them. Then we considered how the findings could be used in assigning men to ratings during recruit classification.

Reassignment Simulation

Earlier we had estimated four-year survival rates of some 28,000 recruits who joined the Navy in CY 1973 and served in 37 ratings. The age, mental ability, education, boot camp, and Delayed Entry Program status of these men were related to their first-term survival. The effect of these recruit characteristics on survival often differed by rating. This suggested that a rating assignment procedure which took advantage of such differences could improve the overall survival rate of a whole recruit cohort (reference 3).

Consequently, we simulated the "reassignment" of the 1973 recruits to see if a gain in overall retention could be obtained by exploiting the estimated survival differences across ratings. A linear program was constructed to maximize the number of first-term survivors by optimally reassigning the same 28,000 recruits in CY 1973 within the same 37 ratings to which they were actually assigned.

The reassignment process was governed by the same constraints that the Navy had to work with in making the actual assignments: the same number and types of recruits, the same number of billets in each rating, and the minimum qualifications for entering each rating.

The 4-year survival rate achieved through the reassignment procedure was six percentage points higher than the actual rate of 67 percent. Further, the distribution of reassignments of men with particular characteristics to particular ratings was reasonable. Table 3 shows the results.

For example, the first row of table 3 shows that of men reassigned to be Boiler Technicians (BT), all had at least 12 years of education, were at least 18 years old at entry, and were in the Delayed Entry Program. Most of them went to boot camp at Great Lakes. None of them trained at Orlando, and none were 6-year obligors.

The most interesting findings are the extremes: the simulation assigns no men with 12 or more years of education to be Enginemen (EN), no men who were in the Delayed Entry Program to the Logistics group, and only a few men from one or even two boot camps to seven (of 14) rating groups. There is nothing implausible or impractical about this. The reassignment program is maximizing 4-year survival by assigning those recruits elsewhere.

Recommendations

Because the results were encouraging, we made these recommendations to the Navy:

TABLE 3

RESULTS OF REASSIGNMENT TEST

(Percentages)

Ratings	High school graduates	6 year obligors	Age 18 or older	Delayed entry program	Boot camp		
					Great Lakes	San Diego	Orlando
BT	100	0	100	100	87	13	0
MM	95	50	100	100	60	40	0
EM/IC	58	40	55	93	62	37	1
EN	0	0	42	65	26	62	12
HT	100	0	61	7	65	0	35
ET/FT	100	70	83	89	50	21	29
Sensors	74	50	72	85	6	36	58
RM/CT	84	52	64	44	32	62	2
Aviation:							
Weapons	95	30	69	100	0	0	100
Maintenance	100	0	100	96	4	59	37
Support	100	0	18	100	58	30	12
DT/HM	100	0	95	63	0	0	100
Logistics	87	0	94	0	12	61	27
Administration	55	0	56	54	45	55	0

- Use the table of survival chances as an informal guide in training Navy classifiers to assign recruits to ratings until a more formal mechanism exists

- Incorporate these survival estimates into the emerging computerized system for recruit classification.

Meanwhile, we plan to validate the estimates on recent recruit cohorts and expand the coverage of ratings.

The New Survival Model (Reference 4)

A new model for estimating chances of first-year survival, called the Cox regression model, uses cross-sectional personnel data. It eliminates the need for longitudinal tracking of recruits, as is the case with our SCREEN work, when evaluating recruiting and retention policies.

A cross-sectional data base includes all individuals in the Navy at a given time, for example December 1978. Its advantages are that the survival patterns are current, and the data need be followed for only a short time. The Cox model quickly and economically generates a survival curve, rather than just a point-in-time estimate of survival. It can also be applied to longitudinal data. To test the efficacy of using the Cox regression model on future cross-sectional data bases, we compared it to the probit model that we used in the selection and assignment work for this study. The probit model can be used with cross-sectional data only at great computational expense. We used both models on the longitudinal data base for 1973 recruits. The probit model was the standard for comparison, because it has given reasonable results in the past.

Separate analyses were performed for recruits who attended Class A schools and those who did not. Previous work has shown that the effects of background and service history characteristics on retention differ for these two groups. The characteristics we used were education, mental group, age, primary dependents at enlistment, and race.

By performing separate probit analyses each month on recruits who survived the previous month, we estimated the effects on survival for each of the characteristics at monthly intervals. This resulted in approximately continuous survival curves, holding constant the effects of recruit characteristics.

The probit estimates of survival were obtained at great computational expense. The corresponding Cox estimates required less than 1/20 of the computation time. The survival curve estimates from the two models were remarkably similar. As expected, the curves for the A school and non-A school groups differed.

The advantage of obtaining survival curves as opposed to point estimates was evident upon observing the high attrition rates after 2 months of service (corresponding to the end of boot camp) for recruits who did not go to A schools. The times at which losses occur can be important in formulating manpower policies. Other things equal, recruits should be selected to maximize the area under the first-term survival curve.

Thus, the Cox model is very promising for manpower studies: it is inexpensive to use and produces timely estimates of survival because it can be applied to cross-sectional personnel data.

EFFECT OF PAY ON REENLISTMENTS (Reference 5)

The second part of the study examined the effects of pay on first- and second-term reenlistments, and the effects of first-term bonuses on second-term reenlistments.[1]

CNA earlier had developed a career force retention model (reference 6) for analyzing military compensation issues. Here, the model was used to estimate the relationships between bonuses and reenlistments by ratings from FY 1974-1978. This involved calculating a military-civilian differential pay variable and an equation linking it to the reenlistment rate while controlling for education, mental group, and race. The differential pay variable is called the Annualized Cost of Leaving. It is defined as the individual's perceived difference between yearly military and civilian pay in the future, such as a 20-year military career. The annualized values are computed using a 10 percent discount rate.

Over the period FY 1974-1978, the conservative index of weekly civilian earnings growth rose 32 percent, the Consumer Price Index increased by 35 percent, Regular Military Compensation (RMC) grew 28 percent, but base pay grew only 22 percent because of the way that pay raises were allocated.[2]

RMC almost kept up with civilian pay during the period, but base pay fell considerably behind. Because we could not tell who

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[1]This part of the study originally included another task to estimate the effects of pay on pilot retention. The work grew into a separate study, CNS 1133, "Navy Pilot Attrition: Determinants and Economics Remedies," by Samuel D. Kleinman and CDR Charles P. Zuhoski, Unclassified, April 1980.

[2]Some pay raises during the period, especially the 1 October 1975 raise, placed a disproportionate share of the raises into allowances.

received allowances in cash and in kind, we used RMC as the measure of military pay.

The Defense Manpower Data Center (DMDC) provided a longitudinal data file on enlisted men who made first- and second-term reenlistment decisions over FY 1974-78: approximately 220,000 first-termers and 50,000 second-termers. Nuclear power NECs were eliminated because their pay did not vary enough during the AVF era to permit estimating its effects on reenlistment. The data file was sorted into 16 occupational groups shown in table 4. Each group contains ratings similar in training and/or working environment.

For each occupational group, table 5 shows the first- and second-term sample sizes and reenlistment rates. Second-term reenlistment rates are much higher than first-term rates, but they mask a strong downward trend. The all-Navy second-term reenlistment rate for FY 1974 was almost 70 percent, while the FY 1978 rate was less than 50 percent.

First Term

We found that the first-term reenlistment rate is strongly and positively related to the Annualized Cost of Leaving measure. However, there is considerable variation by rating. Table 6 categorizes ratings or occupational groups according to whether the effects of pay on their reenlistment rates are high, medium, or low. A 10 percent raise in pay would induce a 30 percent increase in the reenlistment rate for high-effect ratings, a 20 to 30 percent increase for medium-effect ratings, and a less than 20 percent increase for low-effect ratings.

The high-effect category contains many but by no means all of the white-collar ratings. In general, white collar ratings require a smaller pay increase for the same reenlistment effect than do ratings with more arduous working conditions. Exceptions are blue collar Construction ratings, Aviation Mechanics (AD, AM, AS), and Minemen (MN). Their results may be due to similar working conditions in the Navy and in the civilian sector.

The medium-effect category includes most of the electronics or electrical equipment repair ratings -- ET, EM, IC, AT, AX, and AQ. The lone exception is FT, who fall in the low category.

The low-effect category contains ratings with the most arduous working conditions -- MM, BT, and HT. These are also high bonus ratings. With some exceptions, most of the other ratings in the low category are also high-bonus ratings.

In general, these results are consistent with those of past studies. The specific results for ratings should be regarded as preliminary until Navy and OSD bonus program managers agree on a

TABLE 4

OCCUPATIONAL GROUPS AND RATINGS

1. Ship maintenance - HT, MR, ML, PM, IM, OM
2. Health care - DT, HM
3. Logistics - SK, AK, DK, MS, SH, CS, SD
4. Marine engineering - MM, BT, EM, IC, EN
5. Weapons systems/control - ET, FT
6. Aviation maintenance - AX, AT, AQ, AE, AD, AO, AM, AC
7. Construction - BU, CE, CM, EA, EO, SW, UT, CN, CR, BR
8. Administration - LN, NC, PN, PC, YN, AZ, AG
9. Ship operations - OS, QM, SM
10. Communications/sensor systems - AW, RM, EW, ST, OT, SM
11. Aviation ground support - AB, AS, PR
12. Data systems - DS, DP
13. General seamanship - BM, SM
14. Ordnance - GM, MN, MT, TM
15. Cryptology - CT, IS
16. Media - PH, DM, JO, LI, PT, MU

TABLE 5

FIRST- AND SECOND-TERM SAMPLE SIZES
AND REENLISTMENT DATA (FY 1974-78)

Occupational group	First-term Number Base	First-term Number Reenl.	First-term Reenl. rate	Second-term Number Base	Second-term Number Reenl.	Second-term Reenl. rate
1. Ship maintenance	10,596	2,302	21.7	1,811	1,110	61.3
2. Health care	16,624	3,577	21.5	2,984	1,873	62.8
3. Logistics	19,637	6,022	30.7	6,121	4,666	76.2
4. Marine engineering	35,557	7,963	22.4	5,730	3,343	58.2
5. Weapon systems/control	12,781	2,911	22.8	5,877	2,078	35.4
6. Aviation maintenance	37,889	10,074	26.6	8,652	5,001	57.8
7. Construction	6,752	1,212	18.0	1,759	1,193	67.8
8. Administration	18,055	5,144	28.5	3,830	2,485	64.9
9. Ship operations	5,480	986	18.0	667	394	59.1
10. Communications/sensor systems	17,955	4,167	23.2	3,969	2,091	52.7
11. Aviation ground support	8,004	1,887	23.5	1,041	688	66.1
12. Data systems	3,170	711	22.4	1,080	363	33.6
13. General seamanship	9,790	2,541	25.9	1,950	1,330	68.2
14. Ordnance	7,858	2,349	29.9	2,043	1,237	60.5
15. Cryptology	6,264	1,394	22.2	1,979	929	46.9
16. Media	3,794	718	18.9	707	420	59.4

TABLE 6

EFFECTS OF PAY INCREASES ON REENLISTMENTS

High:	Health Care, Logistics, Construction, Administration, Cryptology groups and AD, AM, AS, MN ratings.
Medium:	DS, DP, BM, SM, EM, IC, ET, EW, AT, AX, AC, AO, AQ, AB, PR, RM ratings and Media and Ship Maintenance (less HT) groups
Low:	MM, HT, BT, EN, FT, OT, ST, EW, OS, QM, GM, MT ratings

reasonable set of pay responses. Bonus tables can then be developed. It probably will be sufficient to have three tables for ratings in the high-, medium-, and low-effect categories.

Second Term

The effect on second-term reenlistments of the pay variable based on a 20-year military career were positive for all of the ratings analyzed. But since increased second-term (zone B) bonuses were more than offset by the greater growth in civilian sector pay and the loss of purchasing power because of inflation during the FY 1974-1978 period, second-term reenlistment rates dropped.

The second-term results are consistent with the first-term results: ratings for which pay has a high effect at the first-term reenlistment point also exhibit a high effect at the second (with a few exceptions, such as YN and CE). However, the effect of the same-sized bonus at the second-term reenlistment point is uniformily smaller. The second-term effects are similar to those now used by the Navy and DoD.

First-Term Bonuses and Second-Term Reenlistments

We also estimated the effects of first-term bonuses on second-term reenlistments. We hypothesized that men who get large first-term bonuses would have a second-term reenlistment rate lower than men who get smaller first-term bonuses. We reasoned that higher first-term bonuses would induce less career-committed men to reenlist, and they would be less likely to reenlist at the end of their second term.

To test this, we included the first-term bonus multiple (FTBM) for each rating as a variable in the second-term reenlistment equation. As expected, the effects of FTBM in most cases were negative: the higher the FTBM, the lower the second-term reenlistment

rate. The largest effects of FTBM on second-term reenlistments occurred in precisely those groups where there was a lot of variation in FTBM: HT, AC, and GM.

The effects of FTBM on second-term reenlistments were positive for ET and BT/EN ratings and for ratings in the Ship Operations group. Personnel in these ratings all had reductions in FTBM about halfway through the period FY 1974-1978. Men coming up for reenlistment in FY 1977-78 had lower FTBMs and lower reenlistment rates than those who reenlisted earlier. In these ratings, the effects of FTBM are confounded with other factors that caused a downward trend in second-term reenlistments. In the groups where a negative effect of FTBM was found, FTBM usually increased somewhere in the period FY 1968-1974. This explains some of the drop in second-term reenlistment rates in the latter part of the FY 1974-1978 period.

We derived rough estimates of the percentages of bonus-induced first-term reenlistees who leave at the end of their second term. To make the calculations apply to the same period, we assumed that the base second-term reenlistment rate was the FY 1974 rate. This approximates the second-term reenlistment rate of non-bonus-induced individuals. We found that between 20 and 60 percent of the extra first-term reenlistees obtained by higher first-term bonuses left the Navy at the end of their second term.

This evidence of a significant negative relationship between bonuses and retention at future decision-points has important implications for force management and compensation policy, including retirement reform. For instance, current force planning under alternative bonus policies treats retention rates at different terms of service as independent of one another. Our findings show that they are not.

SUMMARY

The Personnel Management in the All-Volunteer Force Study dealt with the effects of screening, assignment, and pay on the retention of enlisted personnel. The findings of the study are summarized below.

Screening

- The SCREEN table that shows an applicant's chances of completing this first year of service is suitable for continued use in recruit selection. It applies equally well to non-prior service male recruits for the regular Navy and the Active-Mariner reserve program. A qualifying score of 70 also continues to be appropriate because it offsets the cost of additional recruits to

maintain end-strength with savings from the reduction of first-year losses.

- A SCREEN table for no-prior-service women is unnecessary as long as Navy recruiting policy requires women to be school eligible high school graduates.

- A new statistical model has been tested and is now being used by CNA to produce survival curves over an entire enlistment term for future screening purposes. It is inexpensive to apply and produces timely estimates, because it can be applied to cross-sectional personnel data.

Assignment

- Known differences across 37 ratings in the effects of background characteristics on first-term survival can be used to improve the survival chances of future enlistees in these ratings.

- The survival estimates are being revalidated and extended to other ratings.

- The assignment rules for improving survival can be used in training Navy recruit classifiers and incorporated in the emerging computerized recruit classification system.

Pay and Reenlistments

- Over the period FY 1974-1978, Regular Military Compensation (RMC) almost kept up with the growth in civilian sector pay, but base pay fell considerably behind.

- During this period, the effect on reenlistments of first-term bonuses varied by rating. Personnel in white-collar ratings were most responsive to bonuses. Those in electronics and electrical equipment repair ratings were moderately responsive. But personnel in ratings with arduous Navy working conditions, like BT and HT, were least responsive, and consequently require the biggest bonuses. This information can be used by the Navy to set bonus policy for increasing first-term enlistments.

- Second-term reenlistments in different ratings are affected by bonuses in much the same way as first-term reenlistments, although less markedly.

- Second-term reenlistments are negatively related to first-term reenlistment bonuses. From 20 to 60 percent

of first-termers who were induced to reenlist by bonuses leave the Navy at the end of their second term.

The study findings should help Navy personnel managers in the all-volunteer era. Work is already underway to make the most of them.

Meanwhile, pay is not the whole answer to retention problems, any more than are improved screening and assignment procedures. The conditions of naval service, including job factors and life style, also play a part that is difficult to assess. Perhaps the time has come to try.

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